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Chapter 11

HEALTH CARE POLICY AND REFORM IN CROATIA: HOW TO SEE THE FOREST FOR THE TREES

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ABSTRACT

This paper reviews current issues in health care policy and reform in Croatia. It analyses the microeconomic foundations of health care (characteristics of health as an essential good, market and government failures in allocation of health care services); the role of health care in the process of European Union accession; the status of health care in Croatia (health status of the population, demographic trends, health care resources); microeconomic and macroeconomic aspects of health care financing; and recent reform proposals for the health care sector. On this basis a number of recommendations for health care reform in Croatia are formulated. The proposals refer to financial sustainability of health care in the medium and long term; the mix of general taxes and mandatory health insurance contributions as sources of public funding; the mix of public and private funding; the impact of different financing instruments on the operations of health care providers; labour market effects of different financing methods; and the political economy of health care reform.

Keywords:

health care, Croatia, health care financing, economics of health care, health care costs, health care policy, health care reform, market failure, government failure, health status, demographic trends, health care resources, health care in European Union

INTRODUCTION

This paper provides a broad overview of current issues in health care policy and reform in Croatia. The focus is on the “big picture”, on seeing, from the perspective of an informed citizen, the health care “forest” for the trees that are being planted or cut down daily by health care specialists and policy makers focusing on details of health care policy and reform. The relationship between the health care reform and Croatia’s EU accession is also discussed. However, this relationship is only tangential: the health care sector is not really a part of the *acquis*; and even if it were, the authorities in Croatia would need to implement health care reforms primarily for the benefit of Croatian citizens, not because the authorities in Brussels demanded that they did so.

Croatia spends about 8% of GDP annually on health care, which is somewhere between the average for the 15 old EU member states (8.8% in 2003) and the 10 new member states (7.1%; for data sources see Annex tables). About 84% of health care spending comes from public sources and 16% from private sources. Within the public sector, the Croatian Health Insurance Institute (HZZO) accounts for 96% of general government spending on health care. HZZO also plays a key role on the supply side by setting health care delivery standards (together with the Health Ministry) and negotiating volumes and prices of health services with providers.

The bulk of resources for health care financing are collected from employers through mandatory payroll contributions. The remainder of public sources consists of transfers from the budget, i.e. general (rather than earmarked, as in the case of payroll contributions) tax revenues. Private resources for health care financing are almost entirely patients’ out-of-pocket expenditures, given that the role of private health insurance is negligible.

The health care sector has undergone major changes since the early 1990s. These changes have transformed a once highly decentralised and overstaffed system with major regional imbalances in fund-

ing and quality standards, into a more centralised, better funded and overall more efficient system of mixed public and private health care delivery. The system nonetheless continues to face major problems. Most reforms of recent years have focused on cost containment. This has resulted, on the one hand, in the shifting of an increasing portion of health care costs to households, and, on the other hand, a constant shifting of “fire-fighting” efforts from one segment of the health care sector to another. Most of the stakeholders in health care reform are dissatisfied with the current situation, as reflected in an increasingly acrimonious public debate. However, since no one is willing to lose even more benefits, implementing more fundamental reforms has become a political non-starter.

Against this background, one aim of this paper is to try to inject a dose of sound economic analysis into public debate on health care policy, so that different stakeholders in health care reform could perhaps start discussing the real long-term issues more dispassionately. Another aim of the paper is to encourage Croatian economists to do more research on the economics of the health care sector. This area has been rather neglected in the domestic literature and research programmes, which has contributed to the problems currently facing the health care sector. Problems in the health care sector will be analysed from both microeconomic and macroeconomic perspectives, as has become the norm in the profession over the past quarter of a century. To highlight the scope of the problems, the focus will be on identifying key issues rather than elaborating details in different segments of the health care sector.

The next section will thus start with some basic microeconomic foundations: why health care is different from other essential goods and which market and government failures arise in its allocation. Some insights on the situation in Croatia with regard to these micro foundations will also be provided. Section 3 will then turn to the role – or rather, the search for a role – of the health care sector in the process of EU accession. Section 4 will analyse health care in Croatia from a demand-supply perspective, looking at basic health outcomes and demographic trends on the demand side, and human resources and developments in health care delivery on the supply side. Section 5 discusses the microeconomic and macroeconomic aspects of health care financing. The emphasis is on uncovering flaws in the design of financing arrangements that give rise to the observed negative trends and to the dissatisfaction of different stakeholders with the health care system. Section

6 analyses how far the recent reform proposals have (or have not) addressed these flaws. Section 7 concludes with remarks on the more fundamental health care reforms that Croatia will have to implement in the medium term. The main conclusion is that health care reform is much more complex and difficult to design and implement than, for instance, pension reform.

MICROECONOMIC FOUNDATIONS

Why is health care different from other essential goods and its reform so complex?

The literature on health care economics has been primarily developed in English-speaking countries. As a result, the institutional frameworks of these countries have influenced the way economists think about health care even more than in other branches of public economics. This refers in particular to institutional frameworks in the United States and the United Kingdom, which are polar opposites in that the former has no government health insurance (except that for the elderly and the poor) while the latter has comprehensive government health insurance.

The literature usually starts from the assumption that health care can be analysed like any other competitive industry, and then explains why markets alone cannot produce efficient outcomes in the health care sector (see e.g. McGuire and Mayhew, 1989). One reason is that health care is different from other essential goods and services: the health care sector consists of more than a dozen markets – for different types of health care and medical treatment; health insurance; pharmaceuticals, medical equipment; labour market for medical personnel; etc. In most of these markets, serious market failures occur, including adverse selection, asymmetry of information, increasing returns and moral hazard (see below).

Another, perhaps more fundamental reason why markets alone cannot be relied upon to allocate health care is that good health broadly shared is intrinsically valued in all societies (Hsiao, 2000:6). Inequities in health and access to health care offend our innate sense of justice and fairness. The notion that, at the minimum, every individual should have access to basic medical services and medicines to relieve pain and suf-

fering and to avoid untimely death is universally shared (ibid:6). As the cost of modern medicine is not affordable to most lower-income households, they need either medical insurance or access to subsidised health services in case of serious illness. Even for the better-off households, the costs of treating a major illness can lead to financial ruin. Some form of health insurance and government involvement in the provision of affordable health care is thus unavoidable from an ethical point of view.

But health insurance also has a strong economic rationale. In both rich and poor countries, about 25-30% of health care expenditure is spent on 1% of the population, and about 60% is spent on 5% of the population (Hsiao, 2000:11). For 20-25% of the population, there is no spending on health care in a given year (Table 1). However, it is difficult to predict which individuals will be in those 1% or 5% categories that absorb the bulk of healthcare spending. This provides a fundamental rationale for health insurance, as shown in the seminal paper by Arrow (1963).

In Croatia, as in most former socialist countries, discussions about healthcare policy and reform usually start from the opposite end of the spectrum – the general assumption that access to health care is universal, equal and basically free to every individual. Universal right to health protection is constitutionally guaranteed in Croatia (“Everyone is to be guaranteed the right to health care, in conformity with the law”, Article 58). However, many policymakers and members of the public seem to confuse the ethical norms noted above with basic economic laws, which operate even in the health care sector, despite the fact that health is a special good.

Table 1 Healthcare expenditure by percentage of population for all age groups¹

Percent of total population	Percent of total health expenditure
1	29
5	60
10	74
50	98
80	100

¹ Data for the United States, 1998.

Source: Hsiao (2000:12).

For instance, the basic law of demand states that, if one reduces the price of a good or service, then people consume more of that good or service. In the case of health care, the price that people pay for services such as routine doctor visits, vision care, or low-cost treatment of minor illnesses and injuries is being reduced by *comprehensive* health care coverage. The law of demand states that this will increase the use of such care – people will visit doctors more often because routine visits are covered by health insurance.ⁱ This will result in excess demand: providers will not have an incentive to increase supply because the price is fixed below equilibrium level. Excess demand will be resolved through rationing – those willing to get cheap routine care will have to queue for such services. To avoid the waste resulting from over-consumption of routine care, the price of such services needs to be raised. One way to do this is through deductibles and co-payments, but with appropriate solutions for low-income families.ⁱⁱ

In contrast to routine health care, for major illnesses and hospital stays, it makes good economic sense – and is ethically correct – to cover most of the cost by insurance. This is consistent with the principle that insurance should protect people against disproportionate financial loss due to illness – in particular, against catastrophic loss – but it should not insulate them from the cost of *all* health care.

Economists and healthcare experts in countries such as Croatia thus have to explain to policymakers and the public why governments alone cannot and should not finance all the costs of health care.ⁱⁱⁱ One consequence of this starting position is that political economy considerations are of paramount importance for the success of healthcare reforms (see concluding section).

Market and government failures and the situation in Croatia

Market failure is a situation in which markets do not organise production or allocate goods and services efficiently. Economists normally apply this term to situations where the market is failing to create *maximum* efficiency. It does not mean that the market has collapsed or ceased to exist; it suggests that non-market institutions such as government regulation might improve the market outcome. In the healthcare sector, market failures occur in most of the markets making up the sector.^{iv}

Informational asymmetries are present both in the supply of medical services and health insurance, where they are known as “adverse selection” and “moral hazard” problems (see below). On the supply side, the complexity of the technical data on medical treatment, the multiplicity of choices and the distressed state of mind of many who discover that they are ill make it difficult for the patient to obtain and process all information relevant to his or her illness. The patient must therefore rely on the supplier (physicians, other medical professionals) for the provision of information on the potential choices available and the gains associated with the treatment. In an unregulated market environment, this creates the possibility of severe exploitation of patients by doctors, who are in a more or less monopolistic position with regard to information on medical treatment.^v

One solution to the problem of informational asymmetries is the development of a contractual or “agency” relationship between the doctor and the patient, for instance, through legislation on patients’ rights enforceable in courts of law. A complementary solution is the development of self-regulated standards of professional conduct by the medical profession – e.g. self-regulation of entry to the profession and the imposition of ethical standards after entry. These solutions do not guarantee perfect outcomes. For instance, entry barriers into the medical profession restrict supply and increase the price of health care; maintenance of ethical standards of doctors’ behaviour may be hard to enforce in courts. Nevertheless, these solutions are necessary to overcome the worst problems associated with informational asymmetries. One aspect of this problem that seems to be particularly pronounced in Croatia and will need to be addressed as part of the EU accession process is the lack of adequate legislation on patients’ rights and inadequate enforcement of existing legislation.^{vi}

Complexity and uncertainty in health care provision arise because every case is potentially different from every other and may also develop in different ways from previous cases. The market is unable to cope efficiently with these problems. This places an even greater importance on ethical behaviour of doctors, who should provide reassurance that they are acting in the patient’s best interest.

Increasing returns arise because, with medical care becoming more complex, there is a growing need for specialist advice and specialist medical equipment, both of which are costly and require a large number of patients to justify their use economically. In a market environment these aspects of production increase the probability of

oligopolistic structures emerging. Since oligopolistic prices are higher than competitive prices, there is a need for government regulation of pricing of medical services.

Adverse selection occurs when higher-risk individuals such as smokers do not tell a private insurance company about their health risk. As a result, the insurance company calculates a premium that does not cover its expected costs for insuring the higher-risk individuals. When these costs materialise, the insurance company raises premium for all the insured, including the lower risk individuals such as non-smokers. The higher premium may then cause some lower-risk individuals to switch to another insurance company, which offers a lower premium. If no action is taken, this will lead to a vicious cycle and the ultimate collapse of the insurance scheme.

Adverse selection can be reduced by letting insurers set more accurate premia; e.g. by giving them more information or lifting restrictions on how premiums are set. However, this may discriminate against chronically-ill and high-risk people, who may be unable to get health insurance at fair prices. To avoid this situation, the authorities regulating private insurance companies typically define a list of pre-existing health conditions which cannot be excluded from insurance plans.

There is no information on the extent to which the problem of adverse selection in private insurance plans is present in Croatia. As noted above, the role of private health insurance plans is minimal at the moment. But as these plans become more important in the future the authorities will need to take the problem of adverse selection into account in regulatory solutions.

As for the problem of adverse selection in the state-run health insurance plan, the high proportion of lifestyle diseases related to obesity, lack of physical activity, smoking and alcohol and drug abuse, and the fact that everyone pays the same insurance contributions, suggest that the cost of treating such diseases is essentially being subsidised by people who do not expose themselves to such health risks. This raises financial, equity and fairness issues which have yet to become the subject of public debate in Croatia.

The term *moral hazard* refers to the increased risk of careless behaviour and thus a negative outcome (“hazard”) because the person who caused the problem does not suffer the full (or any) consequences of his or her behaviour, or may actually benefit at the expense of others. In health insurance this problem would arise if individuals were taking less care of their health – e.g. exercising less, smoking and drink-

ing more, taking fewer check-ups than would otherwise be the case – just because they knew they were insured. The most important way to mitigate moral hazard is through special provisions (“riders”) in insurance contracts. For instance, many health insurance companies include a provision that requires the insured to obtain regular check-ups, dental cleanings, etc. or offer discounts for non-smokers and people who exercise regularly.

It is not clear how far the problem of moral hazard is present under Croatia’s comprehensive health insurance. In 2004 and 2005 the two top-selling drugs were cholesterol-reduction medicines.^{vii} Widespread smoking and alcohol abuse and the fact that smokers and heavy drinkers do not pay higher health contributions further indicate that there is considerable scope for the moral hazard problem. In a more fundamental health care reform the authorities would therefore need to take determined action against different forms of irresponsible behaviour of insured persons.^{viii}

Government failure is the public sector analogy to market failure and occurs when a government does not efficiently allocate goods and/or resources to consumers of government services. Just as a market failure is a problem that prevents the market from operating efficiently, a government failure is not a failure of the government to bring about a particular solution, but rather a systemic failure that prevents an efficient government solution to a problem.

An example of government failure in the health care sector most relevant to Croatia is the dominance of health practitioners’ interests over the interests and welfare of patients. According to Transparency International (2005), 32% of Croatian citizens think that corruption in the health care sector is “widespread”, and 48% think that it is “very widespread”.^{ix} Sometimes the dominance of physicians’ interests is more or less officially sanctioned. Physicians employed by the state were for many years allowed to pay symbolic rents for state-owned facilities to use for their private practices after regular working hours.^x Such a practice is, of course, unimaginable in the EU or even in other public-sector professions in Croatia. That it was legal is a testimony to the political clout that the medical profession has secured in Croatian society.^{xi} It is also *prima facie* evidence of a systemic failure of government bureaucracies to operate the health care system in the interest of the citizens.^{xii}

HEALTH CARE SECTOR AND EUROPEAN UNION ACCESSION

The relationship between European law and health policy is complex and often confusing, in part because there is no clear demarcation of the competence of the member states and the European institutions in health matters.^{xiii} Article 129 of the 1993 Maastricht Treaty stated that “the Community will contribute to a high level of health protection for its citizens” and made provision for community action to prevent major diseases. This article provided the basis for a programme of action in health promotion, information, education and training in public health, including in areas such as the fight against cancer, AIDS and other communicable diseases; collection of health data; and occupational health and safety; pollution-related diseases and rare diseases.

In the Amsterdam Treaty revision of 1997 it is stated that “Community action shall be directed towards improving public health” (Article 152). However, what exactly is meant by public health was not defined – the border between public health and policies in many other areas, such as the environment and consumer protection, is indistinct. Health considerations are also implicit in many other articles of the Treaty, such as those on research, agriculture, social policy and mechanisms to promote free movement of people and goods. The Amsterdam Treaty also sought to clarify how EU law affects health services, stating that “Community action in the field of public health shall fully respect the responsibilities of the Member States for the organisation and delivery of health services and medical care” (Article 152).

However, this exclusion of health services from the competence of the EU and the implicit recognition that such services were the responsibility of national governments soon proved to be not quite so simple. Health services can only operate by using many inputs that are covered by the single market. Free movement embraces goods such as medical technology and pharmaceuticals; people such as patients and health professionals; and services such as pharmaceutical research and development. The production and movement of these inputs are subject to European law, in particular in that they must be transparent and non-discriminatory.

For instance, a single market, guaranteeing freedom of movement of people, can only function if those people can travel without fear of losing the protection they enjoy in their own countries in respect

of health care. Thus, a series of directives in the early 1970s set out mechanisms for various groups of people whose work involved cross-border travel to receive health care in other member states, with provisions for those abroad temporarily to obtain care in an emergency. In addition, mechanisms were put in place to enable those organizations paying for health care to send patients abroad for treatment. In the late 1990s, the European Court of Justice passed several rulings which established the right of patients to obtain health care abroad without prior authorisation. These rulings have shown that the health care sector of the member states was gradually coming within the reach of community law.

Health services were part of a draft EU Directive on Services that was rejected by European Parliament in early 2006 after sometimes bitter debates. However, by September 2006 an “orientation discussion” on harmonisation of certain aspects of health care services had started among EU members, indicating that this topic will stay on the EU agenda.

As a result of the growing complexity of the relationship between European law and health policy, almost all chapters of the *acquis* have some implications for health care. Those of particular relevance are Chapter 13, on social policy and Chapter 23, on consumers and health protection. But other chapters also contain important provisions related to health care: Chapters 1-3 on the free movement of goods, persons and services; Chapter 12 on food safety; Chapter 27 on the environment; etc. Details on the position of health care in these chapters and on Croatia’s standing with regard to the fulfilment of EU requirements are beyond the scope of this paper. In any case, in a period of intensive accession negotiations they are a moving target. According to the 2005 European Commission *Progress Report*, for instance, Croatian legislation only partially covers the *acquis* in the various sectors of consumer and health protection (European Commission, 2005:102). In the chapter on social policy, the main conclusion is that this area appears to have been “rather neglected” (ibid:78), while implementation and enforcement capacity will need to be substantially improved if the *acquis* in the field of health and safety at work are to be properly applied (ibid:77). How long this might take in practice remains difficult to say. The Croatian authorities seem to be relatively optimistic and believe that it will take about two and a half years (i.e. until the end of 2008) to complete adjustment of overall legislation (not just that relating to health care) with the *acquis*.^{xiv}

Finally, one should note that the Croatian Ministry of Health is not in charge of negotiating any particular chapter of the *acquis*. These responsibilities are split among several ministries, which increases the need for coordination of activities among different parts of the government. To the extent that cooperation among ministries is hampered by lack of resources and skills and by bureaucratic rivalries, the adoption of the *acquis* could be further slowed down.

HEALTH CARE SECTOR IN CROATIA^{xv}

Health status of the population

The picture on the health status of the Croatian population is mixed, with some indicators showing relatively good health outcomes and others showing relatively poor outcomes. Life expectancy at birth – 72 years for males and 79 years for females in 2004 – compares favourably with both EU-15 (76 and 82 years, respectively) and EU-10 averages (71 and 79 years), in particular considering the difference in per capita income (about 40% of EU average in PPP terms in 2004) (Table A1 in Annex). However, Croatian men and women can expect to be sick one more year during their lives than average citizens of the old and the new Europe (Table 2).

Table 2 Life expectancy at birth and years of healthy life, 2004

	Life expectancy at birth (years)		Expected years of healthy life		Expected years of sickness ¹	
	Males	Females	Males	Females	Males	Females
Croatia	72	79	64	69	8	10
EU-15	76	82	69	73	7	9
EU-10	71	79	64	70	7	9

¹ *Calculated as the difference between life expectancy at birth and expected years of healthy life.*

Source: WHO (see Annex Table A1); author's calculations.

Adult mortality rates in Croatia are lower than in the new member states – 160 people per 1,000 die in Croatia between the ages of 15 and 60, compared with an average of 205 in EU-10 – but significantly

higher than in EU-15, where the adult mortality rate is 113 per 1,000 (Annex Table A1). The infant mortality rate is the same as in EU-10 (6 deaths per 1,000 live births), but again significantly higher than in EU-15 (4 infant deaths per 1,000 live births).

Where health outcomes show a particularly large gap with respect to the old (and to a lesser extent the new) Europe is in terms of major causes of death. Croatia has a higher age-standardised mortality rate than EU-15 for virtually all non-communicable diseases: cardio-vascular diseases, cancer, injuries, chronic respiratory diseases, diabetes and other chronic diseases. For instance, in Croatia there were 356 deaths from cardio-vascular diseases per 100,000 people in 2002, almost double the average in EU-15 (185 deaths) (Table A1 in Annex). These developments are probably closely related to the spread of an unhealthy lifestyle, as can be seen from the following health risk indicators (see Table 3):

- Croatia has an extremely high proportion of obese people – almost a quarter of the adult population is overweight, which is almost double the average in EU-15 and 50% higher than in EU-10.
- Prevalence of tobacco use is very high, especially for Croatian women (23% of adult women consume tobacco products regularly) and school-age children (19% of boys and girls aged 13 to 15 smoke cigarettes).
- Alcohol consumption in Croatia is 25% above the EU-15 average and almost 50% above the EU-10 average. Croatia is in the 5th place in the world in terms of adult per capita wine consumption (after Luxembourg, France, Portugal and Italy), and in the 15th place in the world in terms of per capita consumption of beer. Not surprisingly, mortality rates from alcohol-related diseases are very high.^{xvi}
- In addition, prevalence of physical inactivity is very high. The World Health Organization (WHO) data (not shown in Table 3) indicate that in 2003, 47% of Croatian men and 51% of Croatian women were physically inadequately active.^{xvii}

In summary, major preventable health risks are highly present in Croatia and the authorities could and should do much more to educate the population about the seriousness of these risks for health. This is important to emphasise because the 2006 health care development strategy (MZSS, 2006) fails to stress sufficiently the links between health risks and health outcomes, leaving the impression that the state of health of the Croatian population is mostly good.^{xviii}

Table 3 Selected health risk indicators

	Adults (≥ 15 years) who are obese ¹		Prevalence of current tobacco use ¹		Alcohol consumption (per capita per year, in litres) ²
	Males	Females	Males	Females	
Croatia	22	23	32	23	16.2
EU-15	13	13	32	20	12.9
EU-10	14	17	40	18	8.3

¹ Percent of total population.

² Total recorded and unrecorded consumption per adult (15 years and older), in litres of pure alcohol.

Source: WHO (see Annex Table A2) and WHO (2004).

Demographic trends

To round off the picture on the demand for health services, one needs to consider the main demographic trends. As in most European countries, population trends in Croatia have been unfavourable for some time. Between 1995 and 2004, total population declined at an average annual rate of -0.3% (Table A3 in Annex). Croatian women bear fewer children on average (1.35) than women in EU-15 (1.6) and about the same as those in the new member states.

As in the rest of Europe, the population in Croatia is rapidly getting older. According to the 2001 census, 16% of the population was 65 or older; 67% was of working age (15-64 years); and 17% was below the age of 15 (Table 4). By 2050, according to the latest projections of the State Statistical Bureau, the share of elderly in total population might rise to 27%, and the share of the working age population might decline to 59%. The old-age dependency ratio – population aged 65+ as a share of population aged 15-64 – would thus increase from about 23% in 2001 to 46% in 2050, and the total dependency ratio (the elderly plus children as a percentage of the working-age population) from 49% to 69% (Table 4).

But this is only part of the demographic picture with negative implications for health insurance. The ratio of population not paying health insurance contributions to employed persons is already extremely unfavourable, about 2:1 (Table 4). In other words, for every employed person, mandatory health insurance contributions have to be

high enough to cover insurance premia for two additional persons who do not pay the contributions. This in itself is quite enough to show that Croatia's health insurance system faces major long-term sustainability problems. Only one-third of the population is paying for health insurance, while the remaining two-thirds – retirees, family members of insured persons, the unemployed and other non-active persons – are not paying health insurance contributions even though they account for well over two-thirds of health care costs. While there was some improvement in the ratio of the non-paying population to the employed between 2000 and 2005, with population-ageing this ratio will inevitably deteriorate, even if employment rates remain unchanged.

Table 4 Demographic trends and health insurance

Age (years)	Percentage share				Ratio of population not paying mandatory health insurance contributions to employed (%) ¹		
	In total		In working- age population				
	2001	2050	2001	2050			
Children (0-14)	17	14	26	23	Total not paying/ Employed	1.98	1.85
Working age (15-64)	67	59	100	100	Retirees/ Employed	0.70	0.66
Elderly (65+)	16	27	23	46	Family members/ Employed	0.97	0.83
Children plus elderly	33	41	49	69	Unemployed/ Employed	0.09	0.09

¹ Total population not paying contributions also includes other non-active categories of persons.

Sources: DZS (2006); HZZO (2002; 2006); author's calculations.

The high proportion of retirees in Croatia's population is also significant for the health care sector because the distribution of health expenditure by age is highly skewed towards older people. In the United States, for which the most comprehensive data are available, 36% of total health care expenditure is incurred by those 65 years and older, whose share in total population is 12%. For Croatia there are no comparable data, but as an approximation one can use HZZO expenditure on retirees and their families, which has accounted for about 43% of total HZZO expenditure since 2000. This proportion can be expected to increase faster than the share of elderly in total population (currently at

16%), because demand for health care will increase with rising per capita income, again raising the question of the sustainability of the current system.

Health care providers

Viewed from the supply side, the situation in Croatia's health care sector is even less favourable than would be suggested by the above comparisons of health outcomes and demographic trends. Croatia has significantly fewer physicians, nurses, midwives and pharmacists per 1,000 inhabitants than either EU-15 or EU-10 on average (Table 5). Dentists are the only health professionals whose numbers compare favourably with European averages. In terms of hospital beds, Croatia has less overcapacity than the new member states and is basically at the average EU-15 level. Other indicators of hospital capacity compare favourably with European averages; one exception is the average length of stay in hospitals (11 days), which is longer than the EU average (9 days).^{xix}

Table 5 Resources in the healthcare sector (per 1,000 inhabitants)

	Physicians	Nurses	Midwives	Dentists	Pharmacists	Hospital beds ¹
Croatia	2.4	5.1	0.3	0.7	0.5	5.5
EU-15	3.3	9.2	0.6	0.7	0.8	5.4
EU-10	3.2	6.8	0.3	0.6	0.7	6.4

¹ Per 10,000 inhabitants.

Source: WHO (see Annex Table A3).

When comparing these data with health outcomes one can draw two preliminary conclusions. First, in terms of utilisation of human resources, the healthcare sector in Croatia appears to be fairly efficient: with 25-50% fewer healthcare professionals it helps "produce" basic outcomes such as healthy life expectancy that are not significantly lower than EU averages. Second, the one health profession where there seems to be adequate supply of services – the dentists – is also the one where private practice predominates and most expenses are out-of-pocket. Few complaints tend to be heard about the quality of services and corruption in dental care. What this case demonstrates is that

market mechanism can be relied upon to produce efficient outcomes for some health services and reduce – perhaps even eliminate – government failure. It would therefore be interesting to investigate why Croatian citizens have accepted the notion that they have to pay for dental services.

Croatia's health service providers are further organised into primary (general and family practitioners, emergency care etc.), secondary (specialised care and hospitals) and tertiary sectors (highly specialised care, teaching hospitals, medical research facilities) as well as health institutes (including public health institutes). How these sectors are organised and problems of their operation will not be discussed in detail in this paper.^{xx} But some issues that arise in the context of health-care financing and reform need to be mentioned.

One of the key issues is the imbalance that has developed between primary and secondary care. In most European countries primary care facilities treat about three quarters of medical cases. In Croatia, they treat less than 50% of all cases. The counterpart has been a rapid growth of cases treated by specialists in secondary and tertiary facilities, which expanded by 30% in five years (MZSS, 2006:27). This has resulted in duplication of much diagnostic and laboratory work, unnecessary highly specialised treatment and rising overall costs, as provision has shifted towards more sophisticated and expensive forms of health care. Moreover, the supply of preventative health services has been on the decline in recent years, while expenditure on pharmaceuticals has increased rapidly.^{xxi}

At the same time, hospitals have been confronted by the lack of financial resources and reliable mechanisms for quality assurance (WHO, 2005). There have also been imbalances in the distribution of hospital beds by type of care (acute or short-term vs. chronic or long-term) and in the regional distribution of hospital resources (World Bank, 2004). In particular, decentralisation of governance has brought most secondary health care facilities under the ownership of local governments, which lack adequate financial, management and oversight resources to ensure efficient functioning of hospitals.

FINANCING

Unfavourable trends in the health care sector are usually explained by the lack of resources devoted to this sector in Croatia. How-

ever, as noted in the Introduction, Croatia does not lag behind EU-15 in terms of the share of health care expenditure in GDP, and on average spends more on health care than the new member states. In this section it will be argued that, rather than to the lack of funding, the negative trends in health care can be traced to some flaws in the design of health care financing at the microeconomic and macroeconomic levels. In other words, the relatively large resources that the society devotes to the health care are partly wasted because of the flaws in the system of health care financing.

Microeconomic aspects

Primary health care. As the “gatekeepers” of the healthcare system, primary-care physicians play an influential role in determining the costs of health care by prescribing drugs and referring patients for specialist or hospital care. In Croatia, primary-care physicians are paid on the basis of “capitation” payments, i.e. flat fees per patient per year. This system was introduced in the early 1990s, probably for ease of administration and because it prevents over-billing. However, when the authorities introduced this system, they apparently did not take into account that it would provide an incentive to physicians to sign up as many patients as possible.^{xxii} As a result, they might end up with too many patients for the limited amount of time they have. This would lead to rationing of services to free up time to see more patients. Some preventative care might be cut back; more patients might be referred to specialists than would otherwise be the case (as this would save the primary-care doctor time for more detailed check-ups); and medicines might be prescribed more liberally. For instance, although the number of prescriptions per patient per year is limited to five, the per capita number of prescriptions rose steadily from 6.0 in 1998 to 8.1 in 2005 (HZZO, 2005).^{xxiii} An additional reason for the shifting of healthcare provision to secondary and tertiary facilities is that capitation payments do not allow most primary care doctors to equip their offices adequately, so they are more or less forced to send patients to clinics and hospitals.

Hospital financing. Unlike primary care, the hospital payment system consists of three separate components: (i) for patient accommodation hospitals are paid a flat fee per bed per day; (ii) physicians’ services are mainly paid on a fee-for-service basis, using the WHO point

system; (iii) pharmaceuticals and other materials are paid separately, depending on the cost of each item. In addition, each hospital budget is limited by a “global ceiling”, with hospitals being subject to financial penalties if they exceed the ceiling.

Although more diverse, these hospital financing methods also have some serious flaws. Capacity-based payments encourage hospitals to keep the beds full and extend the length of stay, since high occupancy results in steady funding based on the per diem reimbursement. Low occupancy rates also increase the risk that global ceiling on the hospital budget might be lowered the following year. Reimbursing physicians on a fee-for-service basis is certainly an improvement compared with flat fees in primary care, but this system works properly only if the fees are set at levels that provide reasonable compensation to physicians, and if bills they submit are properly monitored and audited. There is no solid evidence that these conditions are fulfilled in Croatia.

More generally, none of the three hospital payment methods provides an incentive for hospitals to increase productivity: the HZZO essentially reimburses hospitals for inputs used rather than outcomes (World Bank, 2004:25). Hospital management therefore has no incentive to try to economise on inputs and realise higher net income for distribution to owners (central and local governments) or hospital employees. On the other hand, when hospitals are faced with an unexpected rise in costs that might break the overall budget limit, the management cannot adjust staffing levels and often has to implement ad hoc cost-saving measures such as restricting the use of medications or procedures (World Bank, 2004).

In 2002, the government introduced a case-based payment system (so-called payment per therapeutic treatment) under which HZZO negotiates volume contracts with all hospitals for selected interventions. This method was intended to reduce the waiting lists while improving control over the total costs, as hospitals no longer charged for each service but instead for entire therapeutic treatments. The introduction of this method has helped reduce the average length of stay for most of the interventions. However, hospitals were given the flexibility to choose whether to bill HZZO under the point-based or the treatment-based system on a case-by-case basis. This has apparently led to a form of “gaming”, whereby the hospital was implicitly guaranteed the highest payment (World Bank, 2004:29). As a result, the overall hospital costs did not decline significantly.

Co-payments. Health care services in Croatia are not entirely free: under the basic health insurance system, patients are required to pay to access health services through a system of co-payments ranging from 15% to 75% for different types of treatment and up to 100% for medicines.^{xxiv} Moreover, there is no reimbursement for most types of treatment from private providers such as dentists and various specialists. The authorities have emphasised the role of co-payments as a means of increasing the share of private health care financing. However, the contribution of co-payments to the overall health budget has been limited, as large segments of the population are exempt from making the payments.^{xxv}

Health expenditure generally represents a small proportion of total household spending, about 2.3% on average during 2003-05.^{xxvi} But there is evidence that out-of-pocket expenditure represents a heavy burden for some financially more vulnerable groups.^{xxvii} Another inequity in the current system is that those with chronic diseases face particularly large out-of-pocket expenses. Finally, the rationale for imposing relatively high co-payments for preventative care is unclear. Although the burden of co-payments can be reduced by subscribing to supplementary health insurance (which is also run by HZZO), the introduction of this insurance scheme has not reduced the financing burden for the HZZO.

Sick leave, maternity leave and disability allowances account for 12-14% of total HZZO expenditure. These costs are in other countries financed and administered separately from health insurance funds, often as part of unemployment insurance programmes, but were apparently imposed on HZZO for purely administrative reasons. In the evaluation of the World Bank (2004:38), Croatia provides one of the most generous sick leave and maternity leave compensation schemes by international standards, with the state taking on almost the entire risk of added labour costs due to illness or maternity. There is little incentive on the part of the employers and employees to be judicious in the use of sick benefits. Given their size, a more rational use of these allowances is likely to have a far greater impact on reducing health care expenditure than, for instance, the announced cost-saving measures for pharmaceuticals (see below).

On the other hand, there are indications that disability and some other allowances (e.g. for war veterans) are insufficient to guarantee minimum socially acceptable living standard to many users of these allowances.^{xxviii} This situation has not been conducive to social dia-

logue and tolerance because it has created the impression that the state is wasting public resources on some groups in the population (given the widespread abuse of sick leave allowances among the employed) while at the same time it has been overly frugal with those who indeed need the help (given that most disabled persons and many recipients of veterans' allowances do not have other sources of income). However, this issue would probably have to be addressed outside the narrow scope of health reform (see concluding section).

Macroeconomic aspects

About 80% of health care costs in Croatia are financed through health insurance contributions (payroll tax) assessed on employees' salaries.^{xxix} The remaining 20% are financed through transfers from central and local government budgets (i.e. from other tax revenues); supplementary and private health insurance; borrowing by HZZO; and other sources. The basic contribution rate for mandatory health insurance is 15%. Since 2003, the contributions are paid only by employers, i.e. there is no sharing of the burden with employees, as was the case between 2000 and 2002, when employers contributed 7% and employees 9% of employees' salaries.^{xxx}

In other words, 80% of all health insurance costs in Croatia are paid by employers – they finance health insurance not only for the workers they employ, but also most of the costs for insuring retirees, members of families of insured persons, the unemployed and other inactive groups in the population. Although this simple fact has major implications not just for the health care financing but also for the labour market, it seems to have escaped the attention of different stakeholders in health care reform, including international organisations such as the World Bank and the IMF that support reform efforts in Croatia's health care sector.

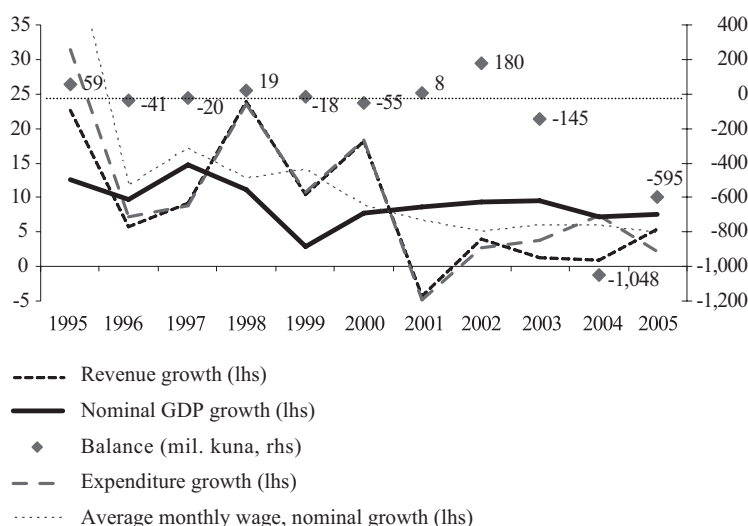
The link between the burden of health care financing for employers and the labour market needs to be explained in some detail. Mandatory health insurance contributions automatically increase labour costs for employers by 15%. This encourages employers to hire workers on temporary contracts, to hire workers without registering them, or to substitute capital for labour. Such practices affect in particular the young, female workers and those who are not satisfied with their current jobs but do not actively seek other jobs (in which they could be

more productive) because of fear of unemployment. If health insurance costs for employers were partly reduced (several possibilities are discussed below), labour costs would be reduced proportionately without reducing net wages, which would most likely encourage employers to create new jobs. Health insurance reform is thus closely related to issues of labour market flexibility and opportunities for increased employment.

Another important macroeconomic aspect of health care financing is the unfavourable mix between public and private financing. In both EU-15 and EU-10, expenditure of the public sector accounts for about 75% of total health care spending, and private expenditure for the remaining 25% (Annex Table A4). In Croatia, private expenditure accounts for about 16% of health care spending. However, patients pay virtually this entire amount (about 1.3% of GDP) out of their own pockets, as private health insurance is for all practical purposes non-existent. In EU-15 countries, out-of-pocket payments account for a slightly higher percentage of total health expenditure (about 17.5%), but private health insurance accounts for a significantly higher portion of expenditure (about 7.5%).^{xxxi} In other words, Croatian citizens already pay for health care almost as much out of their pockets as EU citizens. The reform of health care financing should thus primarily create conditions for redirecting one part of health insurance from HZZO to private insurance companies, while payments of citizens on average would not need to increase significantly.

The HZZO, which accounts for 95% of total health care spending, has generally operated close to balance or with a small deficit (Graph 1). Expenditure growth was particularly strong during 1997-2000, when it exceeded nominal GDP growth and nominal wage growth by a large margin (Graph 1). Strong expenditure growth (exceeding nominal wage growth) took place again in 2004, when the largest HZZO deficit so far was recorded, exceeding 1 billion kuna (0.5% of GDP). One could conclude from these trends that the financial position of HZZO has so far been basically sustainable: revenues have tracked expenditures fairly closely, and when a deficit occurred it was reversed quickly. In addition, since 2001 HZZO revenue and spending have been growing more slowly than either nominal GDP or nominal wages, with the exception of 2004.

Graph 1 HZZO revenues and expenditures (annual percentage changes, left-hand scale) and balance (million kuna, right-hand scale)



Sources: HZZO (2006); DZS (2006); author's calculations.

However, there are some important caveats to this conclusion. The first is that HZZO finances only a small portion of capital spending in the health care sector (less than 0.3% of total spending in 2005). The bulk of finance for capital spending is provided by the Ministry of Health, local governments and through foreign aid. Moreover, depreciation of fixed capital and equipment is apparently not counted as cost, thus understating total operating costs and raising serious questions about the capacity of the system for future investment. The 2002 health care development strategy estimated that the real value of capital equipment in many health care institutions was reduced to 20% of book value (Office for the Strategy of Development of Croatia, 2002:9).

The second caveat is that, from 1996 to 2003, HZZO accumulated debt (as measured by outstanding bills) of over 2 billion kuna (1% of GDP). Complete data for 2004 and 2005 are not available, but adding deficits in 2004 and 2005 to this figure yields an estimate of debt of about 3.7 billion kuna or 1.6% of GDP. Information about the servicing of this debt is very patchy. According to the Ministry of Health (2006:21), during 2004 more than 3 billion kuna of outstanding HZZO debt (arising from bank loans and unpaid bills to wholesale drug suppli-

ers) from 2000, 2002 and 2003 was repaid. But despite this settlement, by 2005 HZZO had been forced to take a loan of over 800 million from Zagrebačka banka to reduce its maturing debt (HZZO, 2006:2). Although this loan represents a significant amount for HZZO (about 15% of total revenue), its accounts consistently show debt servicing costs of only about 0.3% of total expenditure. One can easily conclude from this piecemeal information that much greater transparency is needed in the financial reporting of HZZO and Ministry of Health before the financial sustainability of the state-run health insurance system can be properly assessed.

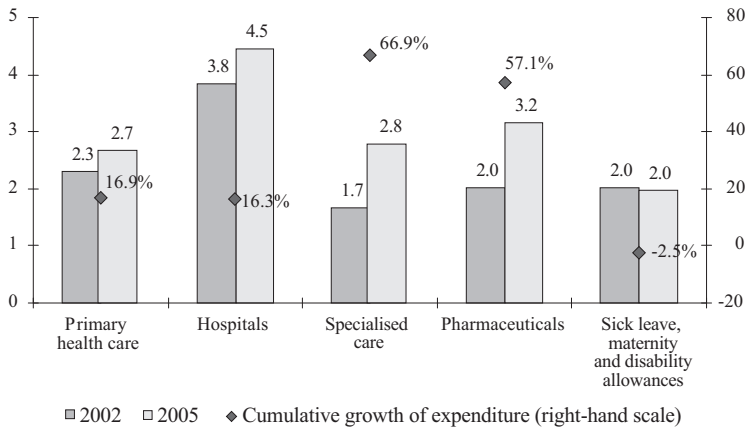
REFORM PROPOSALS

The Croatian health care sector has been in a state of more or less permanent change since the early 1990s. While initial reforms focused on the transformation of the system inherited from the period of self-managed socialism, reforms in recent years have for the most part focused on various aspects of health care financing. The main goals of the 2000-02 round of reforms were thus to contain spending from the public sources; reduce the payroll contribution rate by limiting benefits and increasing the share of private costs; and improve efficiency through reorganisation of the delivery system and devolution of greater responsibilities in primary and secondary care to the local authorities.

The latest round of reforms, launched in 2006, similarly focuses on cost containment. As shown in Graph 2, the fastest rising components of health care expenditure between 2002 and 2005 were spending on specialised care, which expanded by 67% (i.e. at an average annual rate of 19%) and pharmaceuticals, which increased by 57% (i.e. at an annual rate of 16%). The costs in primary and hospital care were more or less contained, while expenditure on sick leave, maternity leave and disability allowances declined 2.5%.

The key measures aimed at containing the rise in spending on pharmaceuticals is the introduction of a more restricted list of medicines (so-called basic list) that can be obtained without co-payment, and the inclusion of a larger number of generic drugs on this list. According to official estimates, this measure will result in annual savings of some 300 million kuna.^{xxxii}

Graph 2 Main components of HZZO expenditure (billion kuna, left-hand scale) and cumulative growth of expenditure from 2002 to 2005 (% , right-hand scale)



Sources: HZZO; author's calculations.

In the primary care sector, possible measures listed by the 2006 health care development strategy include reducing the number of patients to be covered by a team of physicians; encouraging group medical practice so as to reduce administrative costs; introducing the so-called found-holding system of payments to general practitioners,^{xxxiii} and certain measures to encourage preventative care (see HZSS, 2006: 43-45). In the hospital sector, one proposal is to introduce payments based on so-called diagnosis-related groups.^{xxxiv} However, details of these proposals have yet to be elaborated.

The macroeconomic aspects of health care financing have not been addressed by the latest reform, nor has much thought been given to eliminating other microeconomic distortions in health care financing (with the partial exception of primary care) and addressing various market and government failures identified in this paper. Moreover, the mere announcement of key measures related to pharmaceuticals has met with stiff public opposition. One can therefore doubt that the latest reform will provide more than temporary restraint on the growth of overall health care costs.

A more fundamental shortcoming of the strategy is that it does not raise the issue of the healthcare costs of the ageing population. Research for other European countries indicates that demands on health

insurance resources in order to finance expenditure related to ageing population and long-term care for the elderly will increase massively. OECD projections suggest that, in the absence of policy action, public spending on health and long-term care in the major industrial countries could surge from an average 7% of GDP in 2005 to 13% in 2050.^{xxxv} The current “fire-fighting” problems of the authorities pale in comparison with the challenges that these long-term developments will pose.

CONCLUDING REMARKS: WHERE WE STAND AND HOW TO PROCEED

There are three main models of health care financing in developed market economies. Many continental European countries, including Croatia, use so-called social insurance model, in which funding for health care – but also pensions, unemployment and other social risks – comes mainly from compulsory contributions (payroll taxes) paid by workers and their employers.^{xxxvi} In the second, national health insurance model, used in the United Kingdom, Sweden and Canada, among others, the principal source of funding is general tax revenue rather than specific contributions earmarked for health insurance. As a result, the health authorities have to compete for government funding with other users of public funds (education, transportation, etc.) much more intensively. The third main model is used only in the United States. It is unusual in that most workers and their families are insured privately through their employers, so that private funding accounts for a much larger share of total health spending. But even the United States has two major public health insurance programmes: Medicare (for the elderly) and Medicaid (for the poor), both financed through a mixture of general taxes and payroll contributions.

The three models have been slowly converging. The European and American models are assimilating elements of national health insurance: in France, social security contributions are now supplemented by revenues from personal and corporate income taxes; in the United States a big expansion of government spending on older people to help pay for their medicines will be financed from income tax revenues; and in the United Kingdom social security contributions were raised significantly in 2002 to collect additional funding for the National Health Service.

These trends suggest that it is unrealistic for the Croatian authorities and the public to expect that the current model of health care

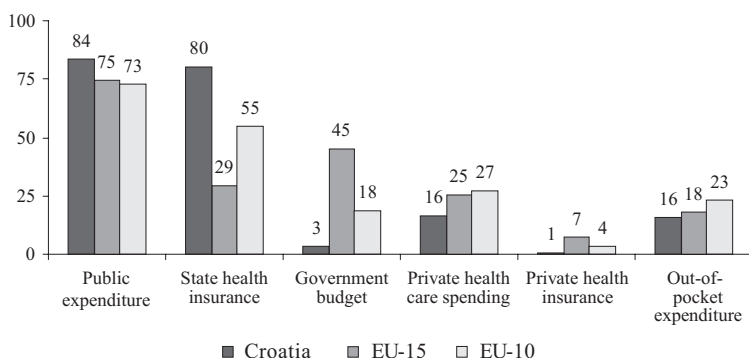
financing can be retained. As noted above, about 80% of funding in this model comes from mandatory contributions that are paid almost entirely by employers and are assessed on a relatively narrow tax base – salaries of employees. Employed persons, in turn, account for only one-third of the population and their share in total population will shrink as the process of ageing accelerates over the coming decades. Continued reliance on payroll tax will thus place an increasingly heavy burden on the productive labour force and on the economy.^{xxxvii}

This means that a significantly greater portion of HZZO funding should come from general tax revenues in the future. At the moment, it is not clear which part of health expenditure for the two-thirds of the population who are not paying payroll contributions is covered by transfers from the budget. The fact that the government often resorts to deficit financing to settle unpaid bills in the health care sector indicates that these transfers are insufficient.^{xxxviii} Since many citizens who do not pay contributions – in particular the elderly – are heavy users of health care services, it is appropriate that they contribute to the health budget. However, many old people do not have sufficient income to make meaningful contribution to health care financing. On the other hand, they contribute to general taxes through the value-added tax and excises (and, in some cases, personal income taxes), so from an equity perspective it makes sense to use more of this revenue to finance health care. Moreover, this approach is feasible because the authorities will anyway have to reduce spending on items such as economic subsidies as part of the EU accession process.

The first major recommendation for health care reform is thus to *change the HZZO financing mix in favour of general tax revenues transferred from the central and local budgets*. As shown in Graph 3, Croatia stands apart from the old and new members of the EU in that the share of state health insurance funding is disproportionately high (80% of total health care funding) and the share of government budget disproportionately low (only 3%). Another clear imbalance is the negligible share of private health insurance in health care financing.^{xxxix} These imbalances have to change in the direction of the EU average. The first imbalance could be redressed as part of the annual budget process and need not even be called a reform. The main requirement would be to determine the proportion of health care costs for the two-thirds of the population who do not pay contributions that will be covered from general taxes. The basic health insurance contribution rate and the employer/employee split of that rate would not have to be changed at first, although over time the contribution rate would have to be reduced in or-

der to create conditions for stronger employment growth. In addition, much greater transparency would be needed with respect to the outstanding debt of the health care system and its servicing. A related issue that would need to be addressed as part of a comprehensive reform is financing of capital expenditure in the health care system.

Graph 3 *Structure of health care financing in Croatia and European Union, 2003 (as a percentage of total health care expenditure)*



Sources: HZZO (2004); HANFA (2006); WHO (2006); author's calculations.

The second major recommendation in terms of potential impact on HZZO finances would be to *re-examine the social benefits and costs of the current system of sick leave and maternity leave allowances*. As discussed in Section 5, Croatia has, internationally, one of the most generous systems of sick leave and maternity leave allowances, which together account for almost 1% of GDP. The sick-leave allowances in particular are open to abuse and there is really no reason why the state should bear the entire risk of workers' absence from jobs due to illness.

The long maternity leave – usually one year in Croatia, compared with 16 weeks on average in most industrial countries^{xl} – is often defended as necessary to help increase the low birth rate. However, it is probably not the most effective instrument to achieve this goal. As elsewhere in the world, the demographic trends observed in Croatia are of a secular nature and the low birth rate cannot be reversed by a single policy measure such as long maternity leave. Recent research indicates that in OECD countries the greatest impact on the fertility rate comes from the female employment rate and availability of affordable

child-care facilities, which allows mothers to return to work relatively quickly after giving birth.^{xli} Against this background, it might be perhaps more beneficial for women and the society as a whole to reduce the length of maternity leave to, say, six months – which would still be generous by developed country standards – and to invest the funds thus saved in an expansion of subsidised child care facilities and simplified administrative procedures for part-time work of mothers. This would allow mothers to return to work earlier; new jobs would be created in this segment of the economy; and the funds the society has invested in education of women would perhaps be used more productively than is currently the case.

Finally, *the issue of insufficient disability and veterans' allowances could be addressed by introducing so-called "zero pillar" of pension insurance.* The aim of this pillar would be to prevent poverty among the disabled, veterans, the elderly and other persons with insufficient means to secure a minimum socially acceptable standard of living for themselves.

Regarding microeconomic aspects of health care financing, the government's proposals to help control expenditure on pharmaceuticals are necessary and welcome. However, these measures deal more with the symptoms than the causes of the rapid growth of expenditure on medicines and can therefore be regarded as a temporary stop-gap measure. As discussed above, the escalation of costs of pharmaceuticals and specialised care can be traced to inappropriate incentives provided to the primary health care under the system of flat fees per patient. While this system is easy to administer and prevents over-billing of HZZO by primary care providers, any savings from these features of the system are now probably outweighed by the costs of prescription medicines and increased referrals of patients to specialised institutions.

What is needed is a system of payments under which primary-care providers would have an incentive to act as true "gatekeepers" of the health care system. *One possibility could be fee-for-service payments based on the points system, with appropriate monitoring and auditing of bills submitted by primary care providers.* This system is widely used in continental European countries and would probably be more effective in checking the rise in expenditure on pharmaceuticals and specialised care than the series of piecemeal cost containment measures introduced over the years.

Similarly, the direction in which the authorities are moving with regard to hospital and specialised care – implementing more widely the system of prospective payments based on therapeutic treatment

groups, and introducing a system of payments based on diagnosis-related groups – is necessary and welcome. However, *the loophole in this system that allows hospitals to choose the billing options that are most advantageous to them (and, hence, more costly to HZZO) would need to be closed.*

Another widely recognised weakness of the Croatian hospital system that would need to be addressed over the medium term is lack of appropriate management skills.^{xlii} Virtually the entire secondary and tertiary health care sectors are managed by physicians, who often lack the adequate training in strategic management, financial planning and other skills necessary for hospital management in a competitive market environment. Moreover, physicians in the role of hospital managers face an inherent conflict of interest: as hospital managers, they decide how to allocate the funds within the hospital, so they can direct the funds to the department where they spend these funds as physicians.^{xliii} If these two functions are merged in one decision maker, impartial financial control at the hospital level becomes very difficult.

In addition, *the functions of monitoring and auditing financial operations of health care institutions are apparently neglected and would need to be significantly strengthened.* The authorities worldwide are working harder at getting better value for the money they provide to hospitals and specialised care institutions.^{xliiv} Health-care expenditure is rising not just because of new technologies and rising demand, but also because the health care sector is dominated by powerful providers – pharmaceutical and medical technology companies, hospitals and influential doctors – who find it fairly easy to pass on the costs from new medical technologies to the state.^{xliv}

The overriding goal of recent health care reforms in developed market economies is therefore to ensure more effective use of public funds. One approach to this goal is to *introduce more competition into healthcare markets*, for instance, by allowing hospitals to keep financial surpluses and reinvest them in services. A complementary approach is to turn to the private sector to provide more healthcare services. In particular, it is important to recognise that public financing does not have to mean public provision of health care. In most European countries, the health care sector functions as a mixture of public and private providers. In Croatia, aside from dental and partly primary care, the role of the private sector as a provider remains limited.^{xlvi} One reason for this state of affairs is that HZZO does not seem to have the administrative capacity to process and monitor reimbursement of medical bills submitted by individuals and private providers for treatment in private medical facilities.

A more fundamental reason is that *the authorities in Croatia have still not elaborated a consistent framework for private sector involvement in the health care sector*. What measures were taken in the past were taken randomly – for instance, the leasing of publicly-owned facilities for use as doctors' private offices or the recent proposal to lease unused hospital capacity to private health insurance companies.^{xlvi} Such partial measures have not made the system more efficient nor have they provided much benefit to health care users (although individual physicians have realised significant benefits for themselves).

The same conclusion applies to the development of private health insurance: *a consistent institutional, regulatory and market framework in which private health insurance companies are expected to function and incentives for their development have yet to be elaborated*. As shown in Graph 3, private health insurance covers only 0.6% of total health care costs in Croatia, compared with 7% on average in EU-15 and 4% in EU-10. It is unrealistic, for instance, to expect that private health insurers will find much interest in the newly created market for pharmaceuticals if the supplementary health insurance scheme operated by the HZZO will cover some of the costs of medicines not included in the basic list.^{xlvi} In addition, there are indications that private health insurance companies in Croatia are regulated perhaps too loosely, so that it is not clear they operate in the best interest of insured persons.^{xlvi}

This brings us to the next major area that has seen little progress over the years: reform of the co-payments system. Co-payments contribute little to the overall health budget; they are difficult to administer because of many exemptions; and are disliked by the public. Yet *having people participate in bearing the costs of health care is the first step toward a true health care reform*. Health is not a free resource and cannot be maintained without costs being incurred. The society does not benefit from unused medicines and unnecessary visits to the doctor. If people understand that each time they visit a doctor someone – including themselves – has to pay to cover the costs, such waste can be reduced.¹ Co-payments should thus be understood as user fees – the cost of accessing the system of health care, similar to road tolls as the cost of accessing the system of highways. The current state of affairs is in that respect untenable: as shown in Figure 3, only 16% of health care spending in Croatia is covered from private sources, compared with the average of 26% for EU members. Within the private sources of funding, there is in particular an imbalance between out-of-pocket expenditure, which is close to the EU average, and costs covered by private health insurance companies, which are way below the EU average.

The experience of Slovakia shows that people are willing to accept the notion that good health is primarily their own responsibility and that every individual has to participate in health care financing.^{li} Moreover, the Slovak experience shows that the introduction of a well designed co-payment system does not hurt access to health care.^{lii} For their part, the authorities should contribute to this understanding by making much more serious, frequent and visible efforts targeted at the prevention of major health risks related to unhealthy lifestyles.

In summary, problems facing the healthcare sector in Croatia are not new or unique. Solid economic analysis and judicious use of other countries' experiences lead to many well-trying solutions and allow us to avoid many mistakes. A key factor for the success of healthcare reform is the authorities' ability to manage political economy aspects of the reform. The effects of health care reform are felt immediately by the entire population. By contrast, the effects of pension reform are delayed and are felt by only one segment of the population at a time. *The authorities therefore need to manage expectations of different stakeholders in health care reform much more carefully and actively. For a reform to succeed, the public needs in particular to see the forest for the trees: the authorities need to elaborate a clear vision of healthcare reform in whose centre stands good health for all Croatian citizens.* The authorities would also be well advised to avoid the illusion that experience and possible success in implementation of pension reform also guarantee the success of health care reform.

Finally, one should emphasise that technical complexity of healthcare policy and reform should not be underestimated. *Economists and healthcare experts in Croatia should therefore make a much more substantive contribution to health care reform than has been the case so far.* This paper has indicated that more detailed research is needed in several areas. These include macroeconomic aspects of health care (financial sustainability of the health care sector in the medium and long term; public and private sources of funds; the mix of taxes and contributions among public sources of funds; impact of different financing models on the labour market; fiscal effects of decentralisation of health care); microeconomic aspects of health care (impact of different financing arrangements on incentives, operations and efficiency of health care institutions; management of health care institutions; organisation and regulation of markets for health care services, pharmaceuticals and health insurance); and the political economy of health care reform.

ANNEX

Table A1. Mortality indicators

Country	Life expectancy at birth ^a (years) in 2004		Healthy life expectancy at birth ^b (years) in 2002		Probability of dying between the ages of 15 and 60 (per 1,000 population) ^a in 2004		Infant mortality rate ^c (per 1,000 live births)	Age-standardized mortality rate, by cause ^{d,e} (per 100,000 population) Both sexes in 2002				Years of life lost, by broader causes ^{d,f} (%) Both sexes in 2002			
	Males	Females	Males	Females	Males	Females		Both sexes 2004	Non-communicable diseases	Cardio-vascular diseases	Cancer	Injuries	Communi- cable diseases ^g	Non-com- municable diseases	Injuries
Albania	69	74	59	63	171	96	16	814	537	154	64	17	63	20	
Bosnia and Herzegovina	70	77	62	66	188	88	13	699	492	121	43	7	81	13	
Bulgaria	69	76	63	67	217	92	12	756	554	125	42	5	87	9	
Croatia	72	79	64	69	160	66	6	613	356	167	48	5	84	11	
Czech Republic	73	79	66	71	161	69	4	568	315	177	50	3	83	13	
Hungary	69	77	62	68	249	108	7	695	364	201	67	3	85	12	
Macedonia	69	76	62	65	198	84	13	745	504	145	74	8	72	20	
Poland	71	79	63	68	198	79	7	593	324	180	53	4	81	15	
Romania	68	76	61	65	232	100	17	728	479	141	56	11	77	12	
Serbia and Montenegro	70	75	63	65	191	98	13	767	508	149	36	7	85	8	
Slovakia	70	78	63	69	203	76	7	636	371	170	50	4	81	14	
Slovenia	73	81	67	72	158	67	4	503	228	160	59	4	80	17	
EU-15 ^h	76	82	69	73	113	58	4	429	185	138	37	6	81	13	
EU-10 ^h	71	79	63	69	205	82	6	600	348	157	75	6	77	17	

a) WHO (2006), URL: <http://www.who.int/vhr/2006/amex/en>. b) WHO (2004), URL: <http://www.who.int/vhr/2004/en/index.html>. c) WHO (2006b), UNICEF (2006).

d) WHO (2004b). e) Rates are age-standardized to the WHO world standard population. Source: http://www3.who.int/whosis/discussion_papers. f) Sum of individual proportions may not add up to 100% due to rounding. g) "Communicable diseases" include maternal causes, conditions arising in the perinatal period and nutritional deficiencies. h) Simple average (author's calculations).

Table A2. Selected health risk indicators

Country	Newborns with low birth weight, both sexes (%) ^a	Adults (≥15) who are obese (%) ^b			Prevalence of current tobacco use (%) ^c			
		Males	Females	Year	Adolescents (13-15) ^d		Adults (≥15) ^e	
					Both sexes	Year	Males	Females
Albania	3	-	-		13.0	2004	46.3	3.0
Bosnia and Herzegovina	4	16.5	25.2	2002	-		54.2	34.2
Bulgaria	10	-	-		34.3	2002	-	-
Croatia	6	21.6	22.7	2003	18.9	2003	31.6	22.9
Czech Republic	7	13.7	16.3	2002	34.6	2002	38.9	25.1
Hungary	9	18.4	20.4	2000	27.8	2003	42.7	31.3
Macedonia	5	-	-		9.0	2003	-	-
Poland	6	-	-		19.5	2003	-	-
Romania	9	9.1	19.1	1997	18.3	2004	-	-
Slovakia	7	-	-		27.3	2003	41.0	23.1
Slovenia	6	-	-		23.6	2003	28.5	19.1
EU-15 ^f	7	13.1	13.2	2002	16.2	2005	36.9	24.6
EU-10 ^f	6	14.4	17.4	2002	28.6	2003	45.3	24.6

a) WHO and UNICEF (2004). b) WHO (2006e). Comparisons between countries may be limited due to differences in definitions, sample characteristics, or survey years. c) In adolescents, data relate to daily or occasional tobacco use, while in adults they relate to daily or occasional tobacco smoking. Comparisons between countries may be limited due to differences in definitions, sample characteristics, or survey years. d) WHO (2006c); and results from the WHO (2006d). f) Simple average (author's calculations).

Table A3. Resources in health care^a

Country	Physicians			Nurses			Midwives			Dentists			Pharmacists			Hospital beds (per 10,000) ^b	
	No.	Per 1,000	Year	No.	Per 1,000	Year	No.	Per 1,000	Year	No.	Per 1,000	Year	No.	Per 1,000	Year		
Albania	4,100	1.31	2002	11,473	3.62	2003	-	-	-	1,390	0.45	1998	-	-	-	30	2004
Bosnia and Herzegovina	5,576	1.34	2003	17,170	4.13	2003	1,229	0.30	2003	690	0.17	2003	363	0.09	2003	30	2004
Bulgaria	28,128	3.56	2003	29,650	3.75	2003	3,456	0.44	2003	6,475	0.82	2003	1,020	0.13	2001	61	2004
Croatia	10,820	2.44	2003	22,372	5.05	2003	1,476	0.33	2003	3,085	0.70	2003	2,348	0.53	2003	55	2004
Czech Republic	35,960	3.51	2003	99,351	9.71	2003	4,772	0.47	2003	6,737	0.66	2003	5,610	0.55	2003	85	2004
Hungary	32,877	3.33	2003	87,381	8.85	2003	2,032	0.21	2003	5,364	0.54	2003	5,125	0.52	2003	78	2004
Macedonia	4,459	2.19	2001	10,553	5.19	2001	1,456	0.72	2001	1,125	0.55	2001	309	0.15	2001	49	2001
Poland	95,272	2.47	2003	188,898	4.90	2003	21,997	0.57	2002	11,451	0.30	2003	25,397	0.66	2003	55	2003
Romania	42,538	1.90	2003	86,802	3.89	2003	5,571	0.25	2003	4,919	0.22	2003	1,275	0.06	2003	66	2004
Serbia and Montenegro	21,738	2.06	2002	48,875	4.64	2002	2,864	0.27	2002	3,792	0.36	2002	1,980	0.19	2002	60	2002
Slovakia	17,172	3.18	2003	36,569	6.77	2003	1,456	0.27	2003	2,364	0.44	2003	2,783	0.52	2003	70	2004
Slovenia	4,475	2.25	2002	14,327	7.21	2002	654	0.33	2001	1,199	0.60	2002	790	0.40	2002	48	2004
EU-15 ^c	-	3.35	2002	-	9.24	2002	-	0.61	2002	-	0.75	2002	-	0.80	2002	54	2003
EU-10 ^c	-	3.17	2003	-	6.84	2003	-	0.34	2002	-	0.63	2003	-	0.66	2002	64	2004

a) WHO (2006f). b) World Health Organization, Regional Office websites and publications. c) Simple average (author's calculations).

Table A4. Health care expenditure in 2003^a

Country	Expenditure on health care			General government expenditure on health care	State health insurance expenditure	Out-of-pocket expenditure	Private health insurance plans	Per capita total health care expenditure	
	Total	Private						At average exchange rates USD	At PPP exchange rates USD
		As % GDP	As % of total health care expenditure						
Albania	6.5	41.7	58.3	9.2	25.1	99.8	0.0	118	366
Bosnia and Herzegovina	9.5	50.7	49.3	11.4	77.5	100	-	168	327
Bulgaria	7.5	54.5	45.5	10.1	51.6	98.4	0.9	191	573
Croatia	7.8	83.6	16.4	13.8	96.1	100	0.0	494	838
Czech Republic	7.5	90.0	10.0	12.7	85.4	83.9	2.5	667	1,302
Hungary	8.4	72.4	27.6	12.1	83.4	88.9	2.1	684	1,269
Macedonia	7.1	84.5	15.5	17.1	97.8	100	-	161	389
Poland	6.5	69.9	30.1	9.8	86.0	87.8	-	354	745
Romania	6.1	62.9	37.1	10.9	85.8	90.4	4.7	159	540
Serbia and Montenegro	9.6	75.5	24.5	16.0	89.8	85.3	14.7	181	373
Slovakia	5.9	88.3	11.7	13.2	93.5	100	0.0	360	777
Slovenia	8.8	76.3	23.7	13.8	82.6	41.1	58.9	1,218	1,669
EU-15 ^b	8.8	74.6	25.4	13.5	39.2	71.7	18.6	2,627	2,538
EU-10 ^b	7.1	73.1	27.0	11.9	74.8	86.7	10.5	644	1,046

a) WHO (2006f). b) Simple average (author's calculations).

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- * *The views expressed in this paper are those of the author and do not necessarily represent those of the Bank for International Settlements. The author is taking part in this project as an independent researcher. Helpful comments and valuable insights from Anto Bajo, Vesna Ivasović, Katarina Ott, Sandra Švaljek and an anonymous referee are gratefully acknowledged. Graham McMaster provided expert language assistance. Any remaining errors are the sole responsibility of the author.*
- i *There is some empirical evidence on this effect. In the late 1970s, the RAND Corporation did an extensive study randomly assigning families to health plans with co-payment levels at 0%, 25%, 50%, or 95%, up to a maximum amount of 6,000 US dollars. As expected, the less that people were asked to pay for their health care, the more often they visited the doctor (see Phelps, 1993).*
- ii *Here one should distinguish between routine visits to the doctor (for minor illnesses such as colds, light injuries, etc.) and preventative health care (e.g. annual medical, dental and vision check-ups). In addition to clear medical rationale, preventative care is also in the economic interest of health insurance companies, whether publicly or privately-owned. This is reflected in the fact that insurance often covers the cost of check-ups up to a certain limit. Many health care commentators fail to notice the difference between routine visits and preventative care; see e.g. Gladwell (2005) in an otherwise highly stimulating article on moral hazard in US health insurance.*
- iii *This statement can also be applied to many western European countries at the moment.*
- iv *For a comprehensive review, see McGuire and Mayhew (1989).*
- v *This information monopoly can be reduced through better education and greater availability of medical information through media, in particular the internet.*
- vi *There is no empirical research to support this claim, but there is widespread anecdotal evidence that patients in Croatia often experience situations in which doctors prescribe treatment without discussing in detail the pros and cons of the treatment with the patient and his or her family (see: www.pravapacijenata.hr and Vjesnik, 21 August 2006). Another indication of inadequate information provided to patients in Croatia is the practice of writing diagnoses in Latin, which sets doctors in Croatia apart from their colleagues in other European countries (see Vjesnik, 12 and 13 August 2006).*
- vii *Based on HZZO data published in Vjesnik, 10 October 2005.*
- viii *Instead, one often gets the impression that the authorities have adopted a cavalier attitude vis-à-vis some health risks, in particular smoking; see, e.g. complaints about smoking in offices and public rooms in the Ministry of Environmental Protection and the Ministry of Culture ("Smoking is forbidden and they smoke 'like Turks'", Vjesnik, 16 August 2006, Readers' mail). Another case in point is the public reprimand of an assistant minister of health who announced in May 2006 that the government was preparing a stricter law on smoking in public places that would be aligned with EU legislation. That statement was denied by the government the same day with an explanation that the existing law already defined clearly where one could and where one could not smoke (Vjesnik, 1 June 2006).*
- ix *The bribery case against the head of heart surgery in clinical hospital in Rijeka (see Večernji list, 17 August 2006) has highlighted a situation long denied by the healthcare profession. For instance, the Croatian Physicians' Association has processed only four cases of bribery since 1995 (Vjesnik, 19 August 2006).*

- x *A typical case is that of a patient who comes for a check-up in a state health facility in the morning and is told by the doctor that she needs certain diagnostic tests. The tests are free but the waiting list is so long that, for non-urgent cases it could take months to get an appointment. However, if the patient is willing to pay out of her pocket, she could take the tests that same afternoon in the same facility from the same doctor, as it becomes doctor's own private office after regular working hours.*
- xi *Physicians were subject to income tax for this type of work but did not have to pay the value-added tax. This practice was ended in mid-2006. However, physicians will still be allowed to work outside their full-time job (at most one-third of working hours) and in service of private insurance companies, which will be allowed to rent excess hospital beds and rooms (Poslovni dnevnik, 24 March 2006). To their credit, the authorities at least admitted that private work of physicians in health institutions in which they held full-time jobs was unethical (ibid.).*
- xii *Indeed, without referring to government failure, the 2002 health care development strategy concludes that "Croatia needs a health care system that will be serve the health of the population, not its own survival" (Office for the Strategy of Development of Croatia, 2002:12).*
- xiii *The main references for this section are McKee, MacLehose and Nolte (2004); McKee [et al.] (2004); and Božičević and Orešković (2004).*
- xiv *See Poslovni dnevnik, 21 July 2006 (www.poslovni.hr).*
- xv *Useful and concise sources of information on the health care sector in Croatia are WHO (2005), Stevenson and Stubbs (2003) and Mastilica and Kušec (2006).*
- xvi *The standardised mortality rate for all alcohol related diseases (including liver cirrhosis, ischaemic heart disease, mouth and oropharynx cancer, traffic casualties, falls and intentional injuries) in Croatia is 195 deaths per 100,000 inhabitants, compared with 155 deaths in Austria; 97 in France, Greece and Italy; and 89 in Portugal (WHO, 2004a:57).*
- xvii *This definition includes physically inactive and minimally active population. For details see Country profiles on WHO's Global InfoBase Online (http://www.who.int/ncd_surveillance/infobase/web/InfoBaseCommon/).*
- xviii *See for instance MZSS (2006:16, 17, 30), where smoking and alcohol consumption, mentioned more or less incidentally, are the only health risks discussed, partly in the context of increased immigration into Croatia in the second half of the 1990s. Obesity and physical inactivity are nowhere mentioned in this strategic document.*
- xix *See MZSS (2006:17).*
- xx *For details, see World Bank (2004) and two recent strategies for the health care sector: Office for the Strategy of Development of Croatia (2002) and MZSS (2006).*
- xxi *Trend decline in the provision of preventative services was noted already several years ago: in 2000 there were 79% fewer check-ups of adults, 41% fewer check-ups at patients' homes and 89% fewer home visits than in 1990 (Office for the Strategy of Development of Croatia, 2002:11).*
- xxii *Each primary care doctor is expected to carry at least about 1,700 patients per year on a roster. This is relatively low compared with EU average (2,000-2,500 patients per primary care doctor) and indicates that a considerable potential for "piling-up" of patients does exist. The lower figure was apparently chosen deliberately in order to encourage physicians to work in under-served areas, where they could earn more under the system of capitation payments.*

- xxiii *There are some solid indications that patients in Croatia have a tendency towards excessive use of medicines; see Vjesnik, 10 October 2005. A particular problem is excessive use of antibiotics, which can lead to the development of resistant forms of bacteria and thus put in danger not only the health of the patients but also that of all other people.*
- xxiv *See Article 17 of the Health Insurance Law (www.hzzo-net.hr).*
- xxv *These include children and students, retirees, the unemployed, people receiving minimum income, recruits in mandatory military service and war veterans.*
- xxvi *See DZS (2006).*
- xxvii *For instance, the 2001 Household Budget Survey shows that for about 7% of retiree households, health costs represented more than 10% of total spending (World Bank, 2004:41). A survey by Mastilica and Božikov (1999) found that total out-of-pocket health care expenditure represented over 17% of income for individuals in the lowest 25% income group, compared with less than 3% for the top 25% income group.*
- xxviii *See for instance Večernji list, 17 July 2006 and 2 August 2006.*
- xxix *This includes employees in private and public sectors, the self-employed and farmers.*
- xxx *Who exactly bears the burden of health contributions (and what part of it) – whether the employer at the expense of profits or workers at the expense of wages – cannot be determined because there has been no research on the incidence of payroll taxes, nor on elasticity of labour demand and supply in Croatia (I am indebted for this insight to Sandra Švaljek). However, one can assume that health care contributions increase the cost of labour regardless of who pays them.*
- xxxi *The share of private expenditure on health care in EU is 25%. Out of this, 70% is financed by the households and 30% by private insurance companies. Out-of-pocket payments are thus 17.5% on average ($=0.25 \times 0.70$), which is somewhat higher than in Croatia (16.4% in 2003).*
- xxxii *See Poslovni dnevnik, 12 April 2006.*
- xxxiii *Under the system of found-holding, financial resources for health care are allocated on a per capita basis and are held in a fund, with the general practitioner usually deciding on the allocation of resources in the fund. The financial incentives offered by this scheme are in the form of control over budgets to be spent on patient care and not in the form of personal financial incentives. A disadvantage of this system (noted in the United Kingdom) is that it might introduce some inequities in the provision of health care.*
- xxxiv *Under payment system based on diagnostic groups, patients are categorised on the basis of diagnoses and resources needed for their hospital treatment. This system can help reduce costs to the health insurance compared with the fee-for-service scheme, but introduces other incentives that might give rise to high costs, such as categorising patients into more complex and therefore expensive diagnostic groups (so-called “code creep”).*
- xxxv *See OECD (2006) and European Commission (2006).*
- xxxvi *This model is often referred to as Bismarckian, named after the greatest German statesman of the 19th century Otto von Bismarck (1815-1898). One should note that at the time Bismarck introduced Europe's first social security system (which comprised health, old-age retirement and disability insurance) his main concerns were to appease the working class (and thereby reduce socialism's appeal to the public) and prevent poverty among the old. The social security system was financially viable because average life expectancy at the time was around 55 years (see Oeppen and Vaupel, 2002).*

- xxxvii *The authorities have made some progress in this regard by gradually reducing the contribution rate from 18% in 1998 to 15% in 2004. Despite the reduction in rates, more revenue was collected from contributions, suggesting that a combination of improved collection and reduced exemptions had a positive effect.*
- xxxviii *For instance, in 2002 the central budget transfer to HZZO dropped to 9% of HZZO revenues, down from 16% in 2001. At the same time, the government borrowed 820 million kuna (6% of HZZO revenues) to pay back the old arrears vis-à-vis health care suppliers (World Bank, 2004:40).*
- xxxix *The share of private health insurance companies is calculated from gross health insurance premia paid (amounting to 105 million kuna in 2003, based on HANFA (2006)), and total health expenditure based on WHO (2006).*
- xl *See Clearinghouse on International Developments in Child, Youth and Family Policies at Columbia University (www.childpolicyintl.org/issuebrief/issuebrief5table1.pdf).*
- xli *See D'Addio and D'Ercole (2005). Among countries with the highest fertility rates in OECD are the Scandinavian countries, France and the United States, which at the same time have some of the highest female employment rates. On the other hand, even though in Italy and Spain only every third woman works, the birth rate is just 1.3 children per woman.*
- xlii *See Poslovni dnevnik, 1 June 2006 and 31 July 2006.*
- xliii *This insight comes from Vlado Puljiz; see Poslovni dnevnik, 1 June 2006.*
- xliv *See the leading article in The Economist, 18 August 2005.*
- xlv *One enduring myth in health care economics is that costs of health care are rising because of the rapid advance and increasing availability of expensive medical technologies. However, despite the widespread use of new medical technology, health care costs have followed very different paths in different countries, indicating that much of the increase in costs has been supply-induced (Hsiao, 2000). Jones (2005) highlights the importance of increasing demand for health care services as a determinant of rising health care costs.*
- xlvi *In 2003, only 3 special hospitals and 4 health resorts out of 73 hospitals and health resorts were privately owned. Out of a total of 6,660 registered medical practices, about 2,800 were privately-owned, of which as many as 2,400 were dentists' offices. More than half of some 1,100 pharmacies were privately owned (WHO, 2005a).*
- xlvii *See Poslovni dnevnik, 24 March 2006.*
- xlviii *See Lider, 17 March 2006; Poslovni dnevnik, 19 May 2006; and Vjesnik, 17 August 2006. On the development of private health insurance companies see a very useful study by OECD (2004).*
- xlx *See World Bank (2004:19-21).*
- l *Statements by some politicians that Croatian citizens are not ready to accept the shift of a part of health care to the market clearly do not help the cause of health care reform (see e.g. Poslovni tjednik, 16 June 2006). If Croatian citizens are not ready to accept more market-based health care, how can the Croatian state be in a position to accept it? It is interesting to note in this context that Croatians spend on average more on mobile phone bills (about 360 euros per year) than on health care (about 350 euros per year). One should not question consumer rationality, however, faced with undistorted price of health care, consumers would be certainly be able to choose between spending on health and mobile phones.*

- li *See Pažitny, Zajac and Marcinčin (2005). For a comprehensive overview of experiences with health care reform in OECD countries see Docteur and Oxley (2004).*
- lii *The basic principles for an efficient and equitable system of co-payments are well-established in the health economics literature and include: high co-payments for small, frequent, cheap and everyday diseases; low or no co-payments for rare, severe and costly diseases, for patients suffering from chronic diseases or disabilities, and for preventative health care (annual check-ups); lower co-payments for the poor and the elderly; and an upper limit on health care costs as a percentage of annual income (see Osterkamp, 2003a; 2003b).*

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